

WHAT IS CLAIMED IS:

1. An image processing apparatus comprising:

an image data control unit connected to at least one
of a) an image reading unit for reading image data, b) an
5 image memory control unit for controlling image memory so
as to write or read image data in or from the image memory,
c) an image processing unit for subjecting image data to
image processing such as editing, d) an image writing unit
for writing image data onto a recording medium, and e) an
10 image data transmission/reception unit for transmitting and
receiving image data with an external device, said image
data control unit receiving first image data read-in by said
image reading unit, and/or second image data read-out by
said image memory control unit, and/or third image data
15 subjected to image processing by said image processing unit,
and/or fourth image data received by said image data
transmission/reception unit, and said image data control
unit transmitting the first image data and/or the second
image data and/or the third image data and/or the fourth
20 image data to said image memory control unit and/or said
image processing unit and/or said image writing unit and/or
said image data transmission/reception unit; and

a switching unit which provides controls for switching
an access right to a path to be used when image data is
25 transmitted or received between said image data control unit,

said image reading unit, said image memory control unit, said image processing unit, said image writing unit, or said image data transmission/reception unit.

5 2. The image processing apparatus according to claim 1, wherein said image memory control unit subjects the image data to be written in or the read-out image data to image processing such as editing.

10 3. The image processing apparatus according to claim 2, wherein said image memory control unit subjects the image data to be written in or the read-out image data to the processing for rotation of the image.

15 4. The image processing apparatus according to claim 2, wherein said image memory control unit subjects the image data to be written in or the read-out image data to the processing for scaling the image.

20 5. The image processing apparatus according to claim 1, wherein said switching unit switches a path based on time division when accesses to said path conflict with one another by different image data.

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6. The image processing apparatus according to claim 1, wherein said image processing unit controls image processing based on time division when the image processing conflicts with one another by different image data.

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7. The image processing apparatus according to claim 1, wherein said switching unit and said image processing unit are controlled by different control units.

10 8. An image processing apparatus comprising:
an image data control unit which is connected to at least one of a) an image reading unit for reading image data, b) an image memory control unit for controlling image memory so as to write or read image data in or from the image memory, 15 c) an image processing unit for subjecting image data to image processing such as editing, and d) an image writing unit for writing image data onto a recording medium, said image data control unit receiving first image data read-in by said image reading unit, and/or second image data read-out 20 by said image memory control unit, and/or third image data subjected to image processing by said image processing unit, and said image data control unit transmitting the first image data and/or the second image data and/or the third image data to said image memory control unit and/or said image 25 processing unit and/or said image writing unit; and

a multiplexing control unit which, when image data to be transmitted to said image data control unit conflicts with one another, multiplexes the image data in conflict with one another,

5 wherein said image data control unit receives the image data multiplexed by said multiplexing control unit.

9. The image processing apparatus according to claim 8, wherein said multiplexing control unit adds control data
10 for controlling the multiplexed image data to the multiplexed image data.

10. The image processing apparatus according to claim 9, wherein the control data includes information concerning
15 a multiplexing mode applied to the multiplexed image data, and/or information concerning respective destinations of the multiplexed image data.

11. An image processing apparatus comprising:
20 an image data control unit which is connected to at least one of a) an image reading unit for reading image data, b) an image memory control unit for controlling image memory so as to write or read image data in or from the image memory, c) an image processing unit for subjecting image data to
25 image processing such as editing, d) an image writing unit

for writing image data to a recording medium, and e) an image data transmission/reception unit for transmitting and receiving image data with an external device, said image data control unit receiving first image data read-in by said image reading unit, and/or second image data read-out by said image memory control unit, and/or third image data subjected to image processing by said image processing unit, and/or fourth image data received by said image data transmission/reception unit, and said image data control unit transmitting the first image data and/or the second image data and/or the third image data and/or the fourth image data to said image memory control unit and/or said image processing unit and/or said image writing unit and/or said image data transmission/reception unit; and

15 a multiplexing control unit which, when image data to be transmitted to said image data control unit conflicts with one another, multiplexes the image data in conflict with one another,

wherein said image data control unit receives the image data multiplexed by said multiplexing control unit.

12. The image processing apparatus according to claim 11, wherein said multiplexing control unit adds control data for controlling the multiplexed image data to the multiplexed image data.

13. The image processing apparatus according to claim 12,
wherein the control data includes information concerning
a multiplexing mode applied to the multiplexed image data,
and/or information concerning respective destinations of
5 the multiplexed image data.

14. An image processing apparatus comprising:
an image data control means connected to at least one
of a) an image reading means for reading image data, b) an
10 image memory control means for controlling image memory so
as to write or read image data in or from the image memory,
c) an image processing means for subjecting image data to
image processing such as editing, d) an image writing means
for writing image data onto a recording medium, and e) an
15 image data transmission/reception means for transmitting
and receiving image data with an external device, said image
data control means receiving first image data read-in by
said image reading means, and/or second image data read-out
by said image memory control means, and/or third image data
20 subjected to image processing by said image processing means,
and/or fourth image data received by said image data
transmission/reception means, and said image data control
means transmitting the first image data and/or the second
image data and/or the third image data and/or the fourth
25 image data to said image memory control means and/or said

image processing means and/or said image writing means and/or
said image data transmission/reception means; and

a switching means for providing controls for switching
an access right to a path to be used when image data is
5 transmitted or received between said image data control means,
said image reading means, said image memory control means,
said image processing means, said image writing means, or
said image data transmission/reception means.

10 15. The image processing apparatus according to claim 14,
wherein said image memory control means subjects the image
data to be written in or the read-out image data to image
processing such as editing.

15 16. The image processing apparatus according to claim 15,
wherein said image memory control means subjects the image
data to be written in or the read-out image data to the
processing for rotation of the image.

20 17. The image processing apparatus according to claim 15,
wherein said image memory control means subjects the image
data to be written in or the read-out image data to the
processing for scaling the image.

18. The image processing apparatus according to claim 14, wherein said switching means switches a path based on time division when accesses to said path conflict with one another by different image data.

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19. The image processing apparatus according to claim 14, wherein said image processing means controls image processing based on time division when the image processing conflicts with one another by different image data.

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20. The image processing apparatus according to claim 14, wherein said switching means and said image processing means are controlled by different control means.

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21. An image processing apparatus comprising:

an image data control means which is connected to at least one of a) an image reading means for reading image data, b) an image memory control means for controlling image memory so as to write or read image data in or from the image memory, c) an image processing means for subjecting image data to image processing such as editing, and d) an image writing means for writing image data onto a recording medium, said image data control means receiving first image data read-in by said image reading means, and/or second image data read-out by said image memory control means, and/or

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third image data subjected to image processing by said image processing means, and said image data control means transmitting the first image data and/or the second image data and/or the third image data to said image memory control means and/or said image processing means and/or said image writing means; and

a multiplexing control means which, when image data to be transmitted to said image data control means conflicts with one another, multiplexes the image data in conflict with one another,

wherein said image data control means receives the image data multiplexed by said multiplexing control means.

22. The image processing apparatus according to claim 21, wherein said multiplexing control means adds control data for controlling the multiplexed image data to the multiplexed image data.

23. The image processing apparatus according to claim 22, wherein the control data includes information concerning a multiplexing mode applied to the multiplexed image data, and/or information concerning respective destinations of the multiplexed image data.

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24. An image processing apparatus comprising:

an image data control means which is connected to at least one of a) an image reading means for reading image data, b) an image memory control means for controlling image memory so as to write or read image data in or from the image memory, c) an image processing means for subjecting image data to image processing such as editing, d) an image writing means for writing image data to a recording medium, and e) an image data transmission/reception means for transmitting and receiving image data with an external device, said image data control means receiving first image data read-in by said image reading means, and/or second image data read-out by said image memory control means, and/or third image data subjected to image processing by said image processing means, and/or fourth image data received by said image data transmission/reception means, and said image data control means transmitting the first image data and/or the second image data and/or the third image data and/or the fourth image data to said image memory control means and/or said image processing means and/or said image writing means and/or said image data transmission/reception means; and

a multiplexing control means which, when image data to be transmitted to said image data control means conflicts with one another, multiplexes the image data in conflict with one another,

wherein said image data control means receives the image data multiplexed by said multiplexing control means.

25. The image processing apparatus according to claim 24,
5 wherein said multiplexing control means adds control data for controlling the multiplexed image data to the multiplexed image data.

26. The image processing apparatus according to claim 25,
10 wherein the control data includes information concerning a multiplexing mode applied to the multiplexed image data, and/or information concerning respective destinations of the multiplexed image data.

15 27. An image processing method comprising:

an image data receiving step of receiving multiplexed image data from any one or plural processing units to perform different processing on image data such as reading, storage, image processing (processing or editing), writing, or
20 transmission/reception of the image data;

an image data control information acquiring step of acquiring image data control information including information concerning contents of the processing on the multiplexed image data received in the image data receiving
25 step;

acquired in the image data control information acquiring step;

an extracting step of extracting discrete image data from the multiplexed image data; and

5 a transmitting step of transmitting the image data extracted in the extracting step to the target processing unit determined in the target processing unit determining step.

10 29. An image processing method comprising:

an image data receiving step of receiving multiplexed image data from any or many processing units to perform different processing on image data such as reading, storage, image processing (processing or editing), writing, or
15 transmission/reception of the image data;

an image data control information acquiring step of acquiring image data control information including information concerning contents of the processing on the multiplexed image data received in the image data receiving
20 step;

a target processing unit determining step of determining a target processing unit, to which the image data received in the image data receiving step is to be transmitted, based on the image data control information
25 acquired in the image data control information acquiring

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step;

a multiplexing step of multiplexing the image data;

and

a transmitting step of transmitting the image data

5 multiplexed in the multiplexing step to the target processing
unit determined in the target processing unit determining
step.

30. A computer readable medium for storing instructions,
10 which when executed by a computer, causes the computer to
perform:

an image data receiving step of receiving multiplexed
image data from any one or plural processing units to perform
different processing on image data such as reading, storage,
15 image processing (processing or editing), writing, or
transmission/reception of the image data;

an image data control information acquiring step of
acquiring image data control information including
information concerning contents of the processing on the
20 multiplexed image data received in the image data receiving
step;

a target processing unit determining step of
determining a target processing unit, to which the image
data received in the image data receiving step is to be
25 transmitted, based on the image data control information

acquired in the image data control information acquiring step; and

a transmitting step of transmitting the multiplexed image data to the target processing unit determined in the target processing unit determining step.

31. A computer readable medium for storing instructions, which when executed by a computer, causes the computer to perform:

10 an image data receiving step of receiving multiplexed image data from any one or many processing units to perform different processing on image data such as reading, storage, image processing (processing or editing), writing, or transmission/reception of the image data;

15 an image data control information acquiring step of acquiring image data control information including information concerning contents of the processing on the multiplexed image data received in the image data receiving step;

20 a target processing unit determining step of determining a target processing unit, to which the image data received in the image data receiving step is to be transmitted, based on the image data control information acquired in the image data control information acquiring step;

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an extracting step of extracting discrete image data from the multiplexed image data; and

a transmitting step of transmitting the image data extracted in the extracting step to the target processing unit determined in the target processing unit determining step.

32. A computer readable medium for storing instructions, which when executed by a computer, causes the computer to perform:

an image data receiving step of receiving multiplexed image data from any or many processing units to perform different processing on image data such as reading, storage, image processing (processing or editing), writing, or transmission/reception of the image data;

an image data control information acquiring step of acquiring image data control information including information concerning contents of the processing on the multiplexed image data received in the image data receiving step;

a target processing unit determining step of determining a target processing unit, to which the image data received in the image data receiving step is to be transmitted, based on the image data control information acquired in the image data control information acquiring

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